REMARKS

In view of the foregoing amendments and the following remarks, reconsideration of the remaining pending claims is respectfully requested.

The amended claims 1, 9 and 15 clearly recite the subject matter of the present invention and further distinguish the features of the present invention from those of the cited reference. All of the amendments can be supported by the specification and figures of the present invention as originally filed, and therefore there is no new matter added therein.

In the specification, the clerical errors in the paragraph [0024] are currently amended. All of the amendments can be supported by the specification and figures of the present invention as originally filed, and therefore, there is no new matter added therein.

Rejection under 35 U.S.C. §103(a)

The claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orr, Jr. et al (U.S. 4,723,925).

The Applicant respectfully deems that it is unreasonable to reject the claims on the basis of 35 U.S.C. §103(a) without comparing the subject matter of the present invention and the only one cited reference.

Despite the improper rejection, the claims 1, 9 and 15 are currently amended

to further clarify the features of the present invention. Reconsideration and removal of the grounds for rejections are respectfully requested.

Claims 1-8

As in the amended claim 1, the present invention provides a method for wiring connection, including steps of: applying at least a barrel pin to a printed circuit board; riveting one end of the barrel pin to the printed circuit board; soldering the barrel pin on the printed circuit board; **inserting at least a wiring into the barrel pin having been soldered on the printed circuit board** via the other end of the barrel pin; and fixing the wiring inside the barrel pin. It is to be emphasized that the barrel pin is soldered on the printed circuit board **before** inserting the wiring into the barrel pin in the present invention (referring to the paragraph [0024] in the specification of the present invention).

However, Orr's patent discloses a crimp contact for terminating electrical conductors to a printed circuit board. Referring to Column 4 lines 1-24 and Figure 1, Orr's patent provides a crimp contact having the crimp barrel 10 for receiving the wire strands 16, having a spacer block 20 and having a square solder post 24 extended from the spacer block 20. In accordance with the method for terminating electrical conductors to a printed circuit board in Orr's patent, the wire 16 and the crimp barrel 10 are crimped together, seated and retained in the plated-through

holes, and then subjected to a solder process (referring to Column 4 lines 64-68 and Column 5 lines 1-2). Apparently, **the crimp contact is soldered on the printed circuit board P via the square solder post 24 after the wire 16 and the crimp barrel 10 are crimped in Orr's patent**, and therefore the present invention is different from Orr's patent. Moreover, it is absent in Orr's patent to teach or suggest that the barrel pin is soldered on the printed circuit board before inserting at least a wiring into the barrel pin.

In addition to the implementation steps, Orr's patent provides a crimp contact having a crimp barrel integrally formed with a solder post for the wiring connection; however, the present invention provides a barrel pin without being connected to a solder post for the wiring connection. Apparently, **the structure of the barrel pin for the wiring connection in the present invention is much simpler than that in Orr's patent**.

Accordingly, the method for the wiring connection of the present invention is more advantageous than that of Orr's patent, and therefore the claims 1-8 are patentable over Orr's patent.

Claims 9-15

Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orr, Jr. et al (US 4,723,925). Claims 9 and 15 are currently amended.

Reconsideration and removal of the grounds for rejections are respectfully requested.

As in the amended claim 9, the present invention provides a wiring connection device for a printed circuit board, including: at least **a barrel pin having one end directly riveted and soldered at the printed circuit board** for an electrical connection between the printed circuit board and the barrel pin; and at least a wiring inserted in the barrel pin for an electrical connection between the barrel pin and the wiring. As in the amended claim 15, the present invention provides a wiring connection device for a printed circuit board, including: **at least two barrel pins mounted at a side of the printed circuit board, and being directly riveted and soldered thereon** for an electrical connection between the barrel pins and the printed circuit board; and at least a wiring fastened in the barrel pins for an electrical connection between the barrel pins and the wiring.

It is to be emphasized that referring to Figure 2 and the paragraph [0024] in the specification of the present invention, **the barrel pin 201 of the present invention is directly riveted and soldered on the circuit board 200**.

However, Orr's patent provides a crimp contact having a crimp barrel 10 for receiving the wire strands 16, having a spacer block 20 and having a square solder post 24 extended from the spacer block 20 (referring to Column 4 lines 1-24 and

Figure 1),and **the spacer block 20 is positioned between the crimp barrel 10 and the square solder post 24 after the crimp contact is soldered on the circuit board** (referring to Figure 3, Column 4 lines 64-68 and Column 5 lines 1-2). Apparently, the constitution of the wiring connection device for a circuit board of the present invention is much simpler than the crimp contact coupled on the circuit board in Orr's patent.

Accordingly, the strategy, the implementation steps, and the devices used in the methods for the wiring connection in the present invention and Orr's patent are different, and furthermore the wiring connection device for a circuit board of the present invention is much simpler and more advantageous than the wiring connection device disclosed in Orr's patent. Therefore, the claims 9-15 are patentable over Orr's patent.

Obvious disadvantages of Orr's patent

In addition to the aforesaid clarifications, the obvious disadvantages of Orr's patent are those illustrated in the background of the present invention. Owing to the wirings mounted in the crimp barrel to be soldered on the printed circuit board in Orr's patent, there are at least four disadvantages as follows:

(1) The air reflow oven passed by the printed circuit board must be enlarged owing to the increased volume of the printed circuit board with the result that the

time for the printed circuit board having the wirings thereon to pass through the oven is increased;

(2) The soldering device must be specifically made owing to the increased volume of the printed circuit board with the result that the cost is increased;

(3) Since the soldering process is performed on the wiring and the printed circuit board, the surface of the wiring might be influenced by the heat provided by the oven or being contacted with the oven so as to be, for example, shrunk, bubbled, etc.; and

(4) After being soldered, the printed circuit board with the wiring is sequentially packaged in a case with the result that the soldered joint has a great opportunity to be pulled, and thus the solder might be departed or rent from the printed circuit board.

Outstanding advantages of the present invention

Compared with Orr's patent, the method for the wire connection and the wiring connection device for a circuit board in the present invention have at least five advantages as follows, which are never shown, taught or suggested in Orr's patent.

(1) The soldering procedure performed on the barrel pin with the printed circuit

board can be automatically completed without the manual operation;

(2) The air reflow oven for the soldering procedure performed on the barrel pin with the printed circuit board does not need to be enlarged;

(3) The wiring does not pass through the oven, so that it will not be damaged to become, for example, shrunk, bubbled, etc.

(4) The design of the production line of the present invention can be more ordered than that of the conventional procedure, the management for the materials and supplies can be easier and the flow path of the production also can be controlled well; and

(5) The overall cost can be reduced since the constitution of the wiring connection device is simpler and the assembling time and manpower can be substantially saved.

Non-obviousness of the present invention

It is to be emphasized that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. ACS Hosp. System, Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929,

933 (Fed. Cir. 1984).

Hence, the present invention is indeed non-obvious over Orr's patent since the technical features of the present invention are never taught or suggested in the ONLY ONE cited reference; Orr's patent (U.S. 4,723,925) based on at least the foregoing clarifications.

Based on at least above reasons, the independent claims 1, 9 and 15 of the present invention has many features and advantages never shown, taught or suggested in Orr's patent, so that the independent claims 1, 9 and 15 are patentable over Orr's patent. Therefore, the claims 2-8 are allowable as being dependent on the allowable claim 1, and the claims 10-14 are allowable as be dependent on the allowable claim 9.

Therefore, the present invention is patentable over the cited reference, and reconsideration and allowance of the present patent application are earnestly solicited at an early date.

Therefore, the Applicant respectfully submits that none of the references cited in the Action, or any combination thereof, render the claims anticipated or obvious. The claims are patentable over the cited references, and reconsideration and allowance of the present patent application are earnestly solicited.

Respectfully submitted,

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